



# ENERGY STAR® HOMES NORTHWEST CERTIFICATION REQUIREMENTS Single Family Homes

**NWBOP 1**  
 Natural Gas Fired Furnaces &  
 Electric Heat Pumps

Builder Option Packages (BOPs) are a prescriptive method for labeling new homes ENERGY STAR. All requirements of the NWBOP shall be met in order to qualify a home for ENERGY STAR Homes Northwest certification and verification by an ENERGY STAR Homes Northwest Verifier.

| 1.1.1. <u>Insulation</u>                    |                   |   |   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
|---|-------------------|---|---|------|------|------|------|---------|-------|-------|-------|-------|-------|-------|------|------------------|-----|-----|-----|------|------|------|------|
| Ceiling                                     |                   | R-38  | Flat or vaulted.  |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Wall  |                   | R-21  | R-19 is optional with advanced framing techniques.  |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Floors Over Unconditioned Space             |                   | R-30  | Insulation in floor joist cavity. Perimeter insulation not allowed.   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Slab Floors                                 | Unheated          | R-10 Perimeter  | Applies to all concrete slab floors above or below grade. R-5 thermal break at slab edge. Perimeter insulation shall be installed for a distance of 2 feet vertical, horizontal, or combined distance. In areas east of the Cascade mountains, 4 feet is recommended.   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
|   | Heated Radiant    | R-10 Full Slab  |   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Basement Wall                               |                   | R-19  | Below grade walls can extend up to 24 inches above grade.   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| 1.1.2. <u>Windows &amp; Doors</u>           |                   |   |   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Glazing                                     | Windows           | U-0.35  | Skylight area shall not exceed 5% of heated floor area.   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
|   | Skylights         | U-0.50  |   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
|   | Max. Glazing Area | 21% of Heated Floor Area                                    | Combined window and skylight area. Up to 1% of heated floor area exempt.  |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Doors                                       |                   | R-5   | One door up to 28 ft² exempt.   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Ducts                                       |                   |   |   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Insulation                                  |                   | R-8   | Ducts inside heated space exempt  |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Sealing                                     |                   | Mastic  | Tapes not allowed.  |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Max. Leakage                                |                   | <0.06 CFM per ft²<br>1.1.3. <u>OR</u><br>75 CFM Total @50Pa | All forced air heating and cooling system ducts shall be installed according to ENERGY STAR Homes Northwest Specifications for sizing and leakage. Performance testing is required.   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| 1.1.4. <u>Ventilation &amp; Air sealing</u> |                   |   |   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Ventilation System                          |                   | Exhaust Ventilation   | Local code requirements are deemed to satisfy this requirement.   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Envelope tightness                          |                   | 7.0 ACH @ 50 Pa   | Local code requirements for air sealing are deemed to satisfy this requirement.   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Heating & Cooling Equipment                 |                   |   |   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Gas Furnace                                 |                   | 90 AFUE   | Installed according to ENERGY STAR Homes Northwest specifications for sizing, controls, airflow and refrigerant charge. Performance testing is required.<br><br>* As of July 1, 2006 any home initiated in the ENERGY STAR Homes Northwest database utilizing a heat pump must be an 8.5 HSPF. Homes initiated prior to July 1, 2006 will qualify with an 8.0 HSPF/SEER 13 heat pump. |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Heat Pump                                   |                   | 8.5 HSPF* / SEER 13   |   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Air Conditioner                             |                   | SEER 13   |   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Water Heating                               |                   |   |   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Natural Gas                                 | ≤ 60 gal          | 0.61  | Gas commercial tank water heaters may be used if they have standby losses that do not exceed the following (btu/hr):  |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
|   | > 60 gal          | 0.60  |   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Electric                                    | ≤ 70 gal          | 0.93  | <table><tr><td>Gallons</td><td>70-74</td><td>75-79</td><td>80-84</td><td>85-89</td><td>90-94</td><td>95-99</td><td>100+</td></tr><tr><td>Max Standby Loss</td><td>930</td><td>960</td><td>980</td><td>1010</td><td>1030</td><td>1060</td><td>1080</td></tr></table>   |      |      |      |      | Gallons | 70-74 | 75-79 | 80-84 | 85-89 | 90-94 | 95-99 | 100+ | Max Standby Loss | 930 | 960 | 980 | 1010 | 1030 | 1060 | 1080 |
|   | Gallons           | 70-74   |   |      |      |      |      | 75-79   | 80-84 | 85-89 | 90-94 | 95-99 | 100+  |       |      |                  |     |     |     |      |      |      |      |
| Max Standby Loss                            | 930               | 960   | 980   | 1010 | 1030 | 1060 | 1080 |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
|   | > 70 gal          | 0.92  |   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Appliances & Lighting                       |                   |   |   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Appliances                                  |                   | ENERGY STAR Qualified                                       | Applies to built-in appliances only.  |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |
| Lighting                                    |                   | ENERGY STAR Qualified                                       | A minimum of 50% of sockets to be either ENERGY STAR bulbs, fixtures, or both   |      |      |      |      |         |       |       |       |       |       |       |      |                  |     |     |     |      |      |      |      |



# ENERGY STAR® HOMES NORTHWEST CERTIFICATION REQUIREMENTS Single Family Homes

**NWBOP 2**  
Zonal Electric, Propane & Oil  
Furnaces<sup>1</sup>

Builder Option Packages (BOPs) are a prescriptive method for labeling new homes ENERGY STAR. All requirements of the NWBOP shall be met in order to qualify a home for ENERGY STAR Homes Northwest certification and verification by an ENERGY STAR Homes Northwest Verifier.

| Insulation                      |                   |   |   |
|---------------------------------|-------------------|---|---|
| Ceiling                         |                   | R-38  | Flat or vaulted.  |
| Wall                            |                   | R-21 + 2.5 sheath   | R-21 is option with advanced framing techniques.  |
| Floors Over Unconditioned Space |                   | R-30  | Insulation in floor joist cavity. Perimeter insulation not allowed.   |
| Slab Floors                     | Unheated          | R-10 Perimeter  | Applies to all concrete slab floors above or below grade. R-5 thermal break at slab edge. Perimeter insulation shall be installed for a distance of 2 feet vertical, horizontal, or combined distance. In areas east of the Cascade mountains, 4 feet is recommended. |
|                                 | Heated Radiant    | R-10 Full Slab  |   |
| Basement Wall                   |                   | R-19  | Below grade walls can extend up to 24 inches above grade.   |
| Windows & Doors                 |                   |   |   |
| Glazing                         | Windows           | ≤ U-0.30  | NFRC rated: Up to 1% of heated floor area exempt.   |
|                                 | Skylights         | ≤ U-0.50  | Skylight area shall not exceed 5% of heated floor area.   |
|                                 | Max. Glazing Area | 21% of Heated Floor Area                                      | Combined window and skylight area.  |
| Doors                           |                   | R-5   | One door up to 28 ft² exempt.   |
| Ducts                           |                   |   |   |
| Insulation                      |                   | R-8   | Ducts inside heated space exempt.   |
| Sealing                         |                   | Mastic  | Cloth duct tapes not allowed.   |
| Max. Leakage                    |                   | < 0.06 CFM per ft² Floor<br><b>OR</b><br>75 CFM Total @ 50 Pa | All forced air heating and cooling system ducts shall be installed according to ENERGY STAR Homes Northwest Specifications for sizing and leakage. Performance testing is required.   |
| Ventilation & Air sealing       |                   |   |   |
| Ventilation System              |                   | Central ventilation with 70% heat recovery                    |   |
| Envelope tightness              |                   | 2.5 ACH @ 50 Pa   | Air tightness in this path must be verified by blower door test before certification is granted.  |
| Heating & Cooling Equipment     |                   |   |   |
| Propane or Oil Furnace          |                   | ≥ 80 AFUE   | Installed according to ENERGY STAR Homes Northwest Specifications for sizing, controls, airflow and refrigerant charge (if applicable). Performance testing is required.  |
| Water Heating                   |                   |   |   |
| Natural Gas                     | ≤ 60 gal          | EF ≥ 0.61   |   |
|                                 | > 60 gal          | EF ≥ 0.60   |   |
| Electric                        | All sizes         | EF ≥ 0.93   |   |
| Appliances & Lighting           |                   |   |   |
| Appliances                      |                   | ENERGY STAR qualified   | Applies to built-in appliances only.  |
| Lighting                        |                   | ENERGY STAR qualified   | A minimum of 50% of sockets to be either ENERGY STAR bulbs, fixtures, or both   |

<sup>1</sup> Requirements apply to homes heated with unit heaters, electric baseboards, fan-forced, radiant or other zonal controlled, ductless, electric resistance systems. Ducted, forced-air electric furnaces are not allowed.